

The NHDOT Research Advisory Council (RAC) was formed in 1993 to ensure that the Research Program is receptive and responsive to the operational needs of the Department. The major objectives of the RAC are to identify research needs, prioritize potential research projects and provide guidance as to the funding levels of research activities. The RAC also serves to monitor ongoing activities and implementation of promising results. Council objectives are met with annual meetings, where results are presented from previous years' projects, and new research ideas (Problem Statements) are presented. The presented Problem Statements are then prioritized following established criteria that were developed to obtain a measure of Department-wide priority. Project funding is based on priority and availability of Statewide Planning And Research monies. The RAC can also move to discontinue or redirect projects that no longer support the needs or goals of the Department.

RAC Participants

The RAC is comprised primarily of Bureau Administrators, and is chaired by the Administrator of Materials & Research. All five Divisions of the Department are represented. In addition, associate (non-voting) members from the FHWA, the University of New Hampshire, and the Cold Regions Research and Engineering Laboratory (CRREL) are also invited to participate. Having input from outside of the Department serves to enhance the process, enabling the RAC to achieve the common goal of improving transportation in New Hampshire.

Submitted Problem

Statements for 2003

Six Problem Statements were presented to the RAC in 2003. They are listed in order of ranking as voted on by the RAC.

1. *Condition Assessment and Evaluation of Rock Reinforcement Along Barron Mountain Rock cut, I-93, Woodstock, NH (Phase I).* Presented by Dick Lane, M & R.
2. *Evaluation of Alternative Deicing Chemicals vs. Straight Sodium Chloride.* Presented by Bob Eaton, Dist. 2
3. *Investigation of NH's Live Load Deflection Criteria as related to Economy, User Comfort and Durability of the State's Bridges.* Presented by Mark Richardson, Bridge Design.
4. *Structural Number of Crushed Gravel, Stone Base Course and Reclaimed Stabilized Base during Freeze Thaw Cycles.* Presented by Don Coleman, Construction.
5. *Performance Curves for Treatments used in Pavement Management Model.* Presented by Scott Davis, Highway Maintenance.
6. *Assessment of Existing Pavement Management Model Triggers and Trigger Strategies.* Presented by Scott Davis, Highway Maintenance.

Many thanks to all the presenters, voting and non-voting RAC members and guests who continue to make the Department's Research Program successful. For more info, or to see how you can participate, visit the NHDOT Research Website at <http://www.t2.unh.edu/nhdotresearch/index.html> or contact the Research office at 271-3151.

Feature Project Durability of Truncated Dome Systems

The Americans with Disabilities Act Accessibility Guidelines (ADAAG) now include provisions that are specific to public rights-of-way. The draft guidelines apply where a pedestrian route is altered as part of a public project. Truncated domes must be added to the surface of curb ramps and other locations where pedestrian ways blend with vehicular ways without well-defined boundaries.

Truncated domes provide a distinctive surface, which are detectable by cane or underfoot to alert people with vision impairments at intersections. The domes compensate for the sloped surfaces of curb ramps, which remove the defined boundary provided by curb faces.

A test program was initiated to document the durability of eight truncated dome systems under winter maintenance conditions of plowing and surface de-icing treatment. Crew 11 of the Bridge Maintenance fabricated the sidewalk test sections and dome systems in their

shop at the Epping yard between mid December and the end of January 2003. Special thanks go to Superintendent Eric Bowser, Supervisor Rick McAllister, and Bridgemen: Mike Mead, Derek Wescott, Craig Bartlett and David Preve, Jr. for a quality installation.

Individual panels were constructed to accommodate each dome system. Five panel sets required recessed surfaces or saw cuts, while one test panel set was created by stamping the domes directly into the freshly finished concrete surface. Three panel sets had typical sidewalk surfaces for retrofit applications. The test site also incorporated cast-in-place ramps using the anti-freeze concrete mix being studied by the US Army Corp of Engineers Cold Regions Research and Engineering Laboratory (CRREL). When assembled along Hazen Drive in February, the entire test section was 229 feet long.

The City of Concord plowed and treated the test section as part of its regular municipal sidewalk maintenance. The Materials & Research Bureau documented the installation and evaluated the performance of the test sections. The first winter's testing consisted of twenty plowing cycles in March 2003. The first two cycles were on natural snowfall. However, the late project start resulted in a lack of snow. A "plow rally" was organized, consisting of Marc Cotnoir of the Mechanical Services Bureau with a front-end loader piling snow on the test sections, followed by repeated removal by the City sidewalk plow.

Eighteen additional plowing cycles were completed on that single day for a total of 20 cycles, comprising our first winter's testing. The Thin Paver and the Pressed Stone Block systems were identified as the most durable of the ADAAG compliant products. Two other systems also performed well, but do not appear to comply with the current ADAAG requirements.

